COMPARATIVE STUDY OF CHRONIC DACRYOCYSTITIS, BY CONVENTIONAL D. C. R. AND, D. C. R. IMPLANT

THESIS

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MASTER OF SURGERY

[OPHTHALMOLOGY]

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C E R T I F I C A T E

This is to certify that the work entitled "COMPARATIVE STUDY OF CHRONIC DACRYOCYSTITIS BY CONVENTIONAL D.C.R. & D.C.R. IMPLANT", has been carried out by Dr. Antriksh Kumar himself in the department.

He has put in necessary stay in the department as required by the regulations of Bundelkhand University.

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This is to certify that the work entitled " COMPARATIVE STUDY OF CHRONIC DACRYOCYSTITIS BY CONVENTIONAL D.C.R. & D.C.R. IMPLANT", which is being submitted as a thesis for M.S. (Ophthalmology) was carried out by Dr. Antriksh Kumar under my constant supervision and guidance.

The techniques & methods described were performed by the candidate himself. The results & observations were checked and verified by me periodically.

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" I DEDICATE THIS WORK TO MY FATHER LATE Dr. RADHEY LAL & MOTHER, WIFE AND SON NANU TO WHOM I OWE SO MUCH ".

Dated :

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C O N T E N T S

INTRODUCTION

INTRODUCTION

Inflammation of lacrimal sac and duct is a common and unpleasent disease, partly because of the troublesome and conspicious symptoms it may cause, partly because it has little tendency to resolve and its adequate treatment presents considerable problems. Dacryocystitis of non specific origin may be described generally under 2 headings- (1) Chronic and, (2) Acute. Chronic is the more common and usually assumes one of 3 clinical types -

(a) Catarrhal;

(b) An encysted mucocele or a chronic suppurative form; and

(c) A chronic pericystitis is rare.

A very rare clinical form is chronic peridacryocystitis and called pericystic tumour by Jocqus (1900) and pre-lacrimal tumour by Rollet (1900).

In its simplest manifestations catarrhal dacryocystitis may assume a latent form devoid of symptoms except epiphora; there is no local tenderness on pressure and the picture is indistinguishable from that of a simple stenosis except that some times the passages are patent on syringing, although usually with difficulty. In the more marked degrees, however, there are signs of conjunctival hyperaemia and irritation at the lateral angle, while

lavage of the sac shows shreds of fibrinous or mucous material in the reflux-definite proof of catarrhal inflammation of sac. Characterised by these 2 symptoms constant and persistant epiphora and an intractable unilateral angular conjunctivitis the condition may persist undefinitely without further developments.

In many cases, however, sedation tends to stagnate and the walls of sac become atonic, so that the inflammatory exudate collects to form a fluctuant swelling which may eventually reach a considerable size in the lacrimal region, bulging out just below the inner canthus under the medial palpebral ligament. The discharge is clear or mixed fluid or geletinous, may be fibrinous and floceulan and is usually sterile. After the lapse of time encysted mucocele is formed.

In chronic supurrative dacryocystitis suppuration may become evident at any stage of development, or may occur from the very begining. The clinical picture is same as in the non suppurative forms except for the occasional presence of a slight and diffuse overlying erythema while the epiphora and conjunctivitis are more pronounced and deformation of the tissue may be considerable. On syringing the sac or on exerting pressure the material coming out from the puncta is purulent and inflammed sac being distended with pus to form a pyocele, it displaces the globe and impair the vision (Toth, 1949).

Above all mentioned diseases are chronic and persistant and spontaneous cure can not be expected, while at any time an acute excerbation is liable to develop. Some times, however, in mucoceles or in purulent types an internal lacrimal (ethmoido-lacrimal) fistula opens into the ethmoid cells and discharge take place into the nose with a sudden diminution or abolishen of the systems. In such a case, seen for the first time, it may be difficult to establish which was the primary seat of the disease is either the ethmoidal cells or lacrimal sac. In the later case anatomical dehiscences in the ethmoidal bone or its destruction by absorption or caries makes this direction of spread easy (Kuhnt, 1908; Von Szily, 1920). Such a development may relieve symptoms considerably, acting in a sense as a nasal drainage operation.

Chronic dacryocystitis secondary to obstruction of nasolacrimal duct is a frequent congenital anomaly. Since more than 50% of these obstructions open spontaneously but generally it is delayed until the patient is 6 months old.

Later on D.C.T. was an usual technique but now to make the communication permanent-essentially a rhinological problem-remained unsolved until an Italian rhinologist, Toti (1904), evolved his operation of external dacryo-

cystorhinostomy. The operation was not immediately popular. D.C.R. is performed in adults, who have chronic dacryocystitis, secondary to complete or partial obstruction of the nasolacrimal duct and in children who have recurrent dacryocystitis after several probings and lacrimal intubation.

According to Chandler (1936) D.C.R. is a purely rhinological technique was proposed from the time of celsus in the first century of christan era. Golden in second century, also employed surgery to create a new passageway from the lacrimal sac into the nose. Further details of D.C.R. operation were explained by Arruga (1946) and Welt (1950).

D.C.R. technique was proposed by West (1910) and Polyak (1912) described as - An endonasal or interval D.C.R. where in the approach to the sac was made from the nose, a technique rendered more easy by trans septal approach (Kofler and Urbanek, 1925). These 2 techniques may be amalgamated and simplified to form a combined external intranasal operation (Moschur, 1915-32). In mean time Frosmark (1911) in Sweden elaborate the idea of transplantation of the sac where in its lower part was cut away and implanted through a hole in the bone to the nose. Following owing to the persistence of suppration in some

cases. Blaskovics (1912) partialy excised the sac tearing at the some time an opening into the nose. Partial or complete D.C.R.

It is possible to achieve in a high proportion of cases, an accurate and large anastomosis of sac to nasal mucosal wall, or of canaliculus to sac to nose with a very high rate of permanent success, leaving only a small minority of cases that are best dealt with by less satisfactory intubational procedures which require continuing after care.

Apart from this conventional method of D.C.R. a modified technique of D.C.R. has been developed. Probing which was advocated by practised (Bowman in 1857) in adults usually fails in establishing its patency, endangers orbital cellulitis its fibrous stricture. D.C.R. is a time consuming process but as a modified technique polythene intubation was started by Summer hill. Intubation being a simpler process was tried in 80 cases of chronic dacryocystitis and patency of nasolacrimal duct was found in 78 cases. Silicone intubation is a safe and effective method for relief but expensive one.

The failure of D.C.R. is rare occuring in most series in less than 10% cases. The management of unsuccessful D.C.R. poses a threaupetic problem. In failed cases when the site is explored one can observe growth of granulation tissue in raw areas.

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REVIEW OF LITERATURE

REVIEW OF LITERATURE

The dacryocystitis has been know from the earliest times owing to its grosser manifestation involving abscesses and fistulae on the face, but was interpreted variously as a defluxion from the brain or a rotting of the naso-orbital bones, the general term, ἡ.γ..ν.λ.ο.ς (agilops, a fistula) including all swellings at the inner canthus. In the middle of the first century A.C., however, disease of the tear passages is mentioned in the literature and Vesalius and Fallopius described the lacrimal system with considerable accuracy, but it was not until the writings of George E. Stahl (1702), of Halle, that the gross pathological manifestations of ἡ.γ.ν.λ.ο.ς... were shown to depend on inflammation, not of the tissues generally but of the nasolacrimal canal, these manifestation is taking three forms - acute, chronic, and hydropsia or ulceration (i.e., with a fistula).

Racial and geographical incidence appear to be of some significance. Thus the disease is rarer among Negroes than whites, a circumstance which may be associated with the sex incidence since radiological examination shows that in the former the canal is shorter, wider, less sinuous and is provided with a larger ostium (Santos-Fernandez, 1903-21).

According to Truc (1900-26) the disease is more common among whites in tropical countries than in temporate climates.

Sondermann's (1923) examination of "normal" cadavers showed that marked constrictions by folds occured in the lacrimal duct in 40% and moderate constrictions in 29% while only 31% had a normal lumen. Narrowing of the osseous canal has been found in cases of dacryocystitis and tends to occur with a flat nose and a narrow fact (Heinonen, 1920; Scidenari, 1947), but is seen particularly if the lacrimal bone is undeveloped and the maxilla compensates for this deficiency (Whitnall, 1912). Moreover, the development of a spur on either the anterior or posterior lacrimal crest of the presence of a well developed hamular process may constrict the entrance to the canal (Zabel, 1900; Onodi, 1913). These bony defects and deformitites are frequently hereditary and account for some of the marked cases of the familial transmission of the disease (Gauldi, 1930; Vogt, 1930).

Most discussion has arisen around the question of nasal disease since this source of infection was originally suggested by Platner (1724) and was stressed by Schirmer (1877) and Kuhnt (1891-95); it is known that inflammatory

changes usually start and are more marked in the lower reaches of the lacrimal passages and it is probable that in a large number of cases their incidence is determined by the direct spread of infection from the nose. It seems equally probable, however, that nasal disease is not the sole factor in the aetiology, but that is usually requires a favourable soil for its extension. It can not by itself for example explain the social and sex incidence of dacryocystitis, nor can it be regarded as invariably present.

The incriminated lesions are numerous. Mechanical obstruction is frequently found, particularly an enlargement or flattening of the inferior turbinate which may almost obliterate the anterior part of the meatus and may cause a local rhinitis implicating the opening of the duct (Harmer, 1915; Bilancioni, 1921; Sondermann, 1923; Post, 1928; and Others). Similarly a deflection of the septum may compress the inferior turbinate against the laternal nasal wall (Kofler, 1919-30; Stenger, 1920; Bockstein, 1926). In this connection it is interesting that suppurative dacryocystitis has followed packing of the nose (Ruttin, 1916; Kofler, 1919-30). Congestive and hypertrophic conditions of the mucosa, whether vasomotor or

inflammatory, may similarly cause a varied degree of obstruction at the lower end of the canal ; exceptionally a nasal polyp or a neoplasm acts in a similar manner. Inflammatory conditions, whether chronic nasal catarrh or the more acute and suppurative infections may spread into the lower part of the duct particularly if the ostium is freely open. Finally, atrophic conditions in the nose frequently figure in the aetiology, particularly osoena, the destruction of the mucosa leaving a patulous ostium not only permitting ready extension of the disease upwards but allowing the direct entrance of infective scretion into the duct on blowing the nose (Franceschetti, 1935). Heilmaier (1899), for example, found 136 cases of atrophic rhinitis among 352 cases of dacryocystitis.

Sinus disease has undoubtedly a close relation with lacrimal inflammation; here again some advocates of this particular source of infection have undoubtedly overstressed their cases Some authors admitted little or no relationship (West, 1926; Backstein, 1926; Diggle, 1927; and others), while others claimed the sinusitis and dacryocystitis co-existed in too large a proportion of cases to be coincidental and that the latter frequently cleared up on the relief of the nasal condition (Peters, 1905-13), 50% of cases of suppurative dacryocystitis with

fistula; Kuhnt, 1914, 68% of all cases of dacryocystitis with certain, and 23% with probable sinus disease; Brunslow, 1920, 63.5% and 22%; Cordero, 1934, 46% certain, 33% probable; Garfin, 1942, 55%). It is probable that the infection spreads either by venous or lymphatic pathways, by contiguity or by continuity; lacunae in the lacrimal bone sometimes allow direct continuity between the ethmoids and the sac, the walls of the lacrimal fossa and the upper part of the duct being pneumatized by ethmoid cells, or the lacrimal bone, which is frequently paper-thin, becoming absorbed by age, caries or pressure; while the pericystic tissues, rich in lymphocytes and heavily vascularized, form a readily traversible bridge between the two.

Conjunctival infection constitutes a third method of direct spread; but all the evidence points to its rarity. Excepting infiltrating diseases, such as trachoma, there is little evidence that infection from above figures largely in the aetiology of inflammations below the canaliculi.

A very rare clinical form is CHRONIC PERIDACRYOCYSTITIS, originally described by Cirincione (1890) and called pericystic tumour by Jocqs (1900) and pre-lacrimal tumour by Rollet (1900). Clinically it appears as a

chronic abscess in the perilacrimal space leaving the lacrimal passages themselves patent (Wright, 1938). The infection may originate in the wall of the sac, or it may be formed in a diverticulum of the sac (Terson, 1903; Markomichelakis, 1964); alternatively, it may arise from a neighbouring periostitis or sinusitis.

Other expendients were advocated. J.L. Petit (1734) incised the sac and from this vantage point forced probes through the duct, the wound being allowed to heal after the duct had been kept continually open for some time, a procedure revived by Golowin (1923) who forced sounds up to 9 mm in diameter through an incision in the sac down the duct, fracturing the bone on the way. On the other hand, de la Forste (1753) practised retrograde probing from the nasal ostium, a method after advocated by Polyak (1902). Critchett (1864) and at a later date Brown (1926) used dilating sounds of laminaria; Weber (1863-65) advocated rapid dilatation with comical sounds up to 4 mm in diameter, a practice followed by Ziegler (1910-22). Attempts to socure permanent drainage by leaving a metal tube (of gold, Mackenzie, 1819; Dupuytren, 1823), or a style (or permanent probe) of silver in the duct (Walton, 1863) were persistently made; others used wires of tubes of gold, silver or lead, and other's again threads of silk, catgut or silk-worm gut.

All these procedures were revived in more recent years, particularly the permanent insertion of a polythene tube into the naso-lacrimal duct after exposing the lacrimal sac in cases of chronic dacryocystitis (Summerskill, 1952; Singh and Garg, 1972). Most of them, however, are more applicable to stenosis of the duct than to the treatment of an inflammatory condition. Cures have been claimed with all these methods, but the risk of a spreading callulitis would seem to render their general application dangerous. Several such accidents have occured, some of them fatal, owing to orbital cellutitis and meningitis (A.E. Jones, 1884; Fulton, 1885; Leplat, 1894; Cabannes and Ulry, 1897; Hildreth, 1936; and others).

So far as the technique of dacryocystectomy is concerned the first essential is that the operation be carried out in a bloodless field with anatomical exactitude and the mucosa be removed in its entirety, particular attention being paid to the fundus of the sac and the junction with the canaliculi which, if necessary, can be completely disected out around a probe in the canaliculus (Pooley, 1913), moreover, the duct must be destroyed by thorough curettage down the length of the naso-lacrimal canal. The survival of any mucosa will ential continued suppuration, a breakdown as a festula, continued discharge

through the puncta on pressure, and the persistance of annoying epiphora. It is to be noted that in such post-operative suppuration the abscess some times points above the medial palpebral ligment (West, 1932). It may happen that in the event of a canaliculitis persisting, the canaliculi may require to be destroyed by diathermy (Schultz, 1904).

In order to avoid an external scar and to minimize haemorrhage, Von Hoffmann (1896) excised the sac from the conjunctival aspect : such a technique presents difficulties in obtaining a complete excision and is not to be generally recommended.

It is to be noted that dacryocystectomy is not without possible complications; loss of vision through orbital haemorrhage (Kayser, 1932) or orbital cellulitis (Galezowski, 1906) has been reported, while destructive corneal ulceration may follow, probably owing to unintentional trauma at the time of operation.

The primitive method of destruction of the mucous membrane by the cautery has been replaced by the use of diathermy (Hildreth, 1936; MacGillivray, 1936; Safar, 1949). The alternative of chemical destruction of the after incision into the sac (a method used extensively

by Galen) or by injection into the canaliculi has been repeatedly resurrected, frequently with enthusiasm and conviection, the agents employed being silver mitrate, zinc chloride, trichloracetic acid, mercuric chloride, chronic acid, and so on. It would seem, however, that such a method of destruction is not so efficient and neat as an adequately performed excision; nor is it free from risk.

During the end of the last century and, indeed, during the first three decades of the present one, the classical methods of treating dacryocystitis were, therefore, probing by Bowman's technique in those cases wherein little structural damage had occurred, and excision of the sac in the vast majority of cases. In general the results were satisfactory; but even when dacryocystectomy was most in favour, the persistence of epiphora-even although not in distressing degree-always excited aspirations to return to the original technique of the ancients, wherein hope was offered of a total cure of the disease with a perfect restoration of function by re-establishing a connection between the sac and the nose (Caldwell, 1893; and others). How to make the communication permanent-essentially a rhinological problem

remained unsolved until an Italian rhinologist. Toti (1904), evolved his operation of external dacryocystorhinostomy. The operation was not immediately popular, partly because the technique was new and difficult to the ophthalmologist and partly because the results were not by any means invariably good. Subsequent improvements, however, have remedied these defects, but in the meantime a purely rhinological technique was proposed by West (1910) and Polyak (1912) - an endo-nasal or internal dacryocystorhinostomy wherein the approach to the sac was made from the nose, a technique rendered more easy by a trans-septal approach (Kofler and Urbanck, 1925). These two techniques may be umalgamated and simplified to form a combined external intranasal operation (Mosher, 1915-23). Meantime, Forsmark (1911) in Sweden, elaborated the idea of transplantation of the sac wherein its lower part was cut away and implanted through a hole in the bone into the nose. Finally, owing to the persistence of suppuration in some cases, Blackovics (1912) partially excised and West (1921) completely excised the sac leaving at the same time an opening into the nose-partial or complete dacryocystectorhinostomy. There is no doube toady that in properly selected cases a modification of one or other of these procedures produces the best results.

The original external dacryocystorhinostomy of Toti (1904) consisted of exposing the sac by an external incision, resecting its inner wall, punching out a corresponding piece of bone with a hammer and chisel, resecting a corresponding area of the nasal mucous membrane, and sewing up the external wound. The lateral wall of the sac, pressed by bandages over the opening in the bone, thus became the lateral wall of the nose into which the canaliculi opened directly so that the sac itself as such ceased to exist. The success of the operation depended largely on the extensiveness of the resection; but even so, the formation of granulations or the presence of extensive disease of the walls of the sac frequently resulted in failures from subsequent cicatrization. This led Kuhnt (1914) to suture flaps of the nasal mucosa to the periosteum to limit the formation of granualations. This was improved upon by Ohm (1920), who sutured the margins of the nasal mucosa to the sac, and by Dupuy-Dutemps and Bourguet (1921), who, by incising the posterior wall of the sac without any sacrifice of tissue, sutured the nasal and lacrimal mucous membranes together over the bony margins so that no part of the wound might remain which could cictrize. Even if it does, incision of the opening and repeated probing through the

lower punctum may eventually result in a functioning passage (Dupuy-Dutemps, 1933). Dupuy-Dutemps's technique or modifications of it has remained the most popular, and in suitable cases a very high percentage of functionally good results can be obtained (94.8%) in 1,000 cases, Dupuy-Dutemps, 1933; 96% in 1,200 cases, Averbach and Lvanova, 1935; 97% Weve and Kentgens, 1937; 80%, Traquair, 1940; 90%, Scott, 1949; 97%, Pico, 1972).

The main modifications have been variations in the methods of suturing; thus Soria (1944) sutured a single flap of nasal mucosa to the posterior flap of the sac and the anterior flap to the bony opening through the bony wall of the nose for the hammer and chisel of Toti; Iliff (1954) introduced the oscillating Stryker trepain-saw; and Krasnov (1971) cut the bone ultrasonically. Several surgeons have attempted to maintain patency in the opening by the temporary introduction of such agents as rubber catheters, polythene tubes, gauze or silk sutures. Good haemostasis is essential indeed to attain it some surgeons relied on hypotensive anaesthesia (Rycroft, 1959). The opening in the bony lacrimal fossa should be large - at-least 12.0 mm in diameter and should exclude the medial wall of the nasolacrimal canal. Mucosa should be sutured to mucosa anteriorly and posteriorly, and the medial

palpebral ligament is best preserved although, to increase the ease of access, its severance has been advised (Pico, 1972).

Transplantation (Implantation) of the lacrimal sac so that its lower end is introduced into the nose is possible only when the upper lacrimal passages are open and fully patent. Forsmark (1911) out off the lower part of the sac and introduced the proximal end through a hole chiselled through the lacrimal bone into the nose where it was anchored by a thread pulled through the nostril and fastened to the check. Somewhat similar techniques were employed by several surgeons (Stock, 1934; Stokes, 1935-39; Gifford, 1944; Juge, 1955; Burn, 1961) but the operation has not become popular.

Partial or complete dacryocystectorhinostomy is applicable when the walls of the sac are extensively diseases and their retention seems inadvisable, a technique available when the sac is absent. To meet such cases Blaskovies (1912), Hotte (1918) and Arruga (1935-38), using an external method, removed the whole sac except that part into which the canaliculi open and thereafter made an opening into the nose; while West (1921), working endo-nasally, totally excised the sac from this approach

in cases of extensive disease of the wall of the sac, and with the same approach Margenstern (1942-50) destroyed the sac by diathermic coagulation.

The various technical modifications introduced into these procedures have been ably reviewed by Chandler (1936); Kaleff (1937), Welt (1950); and Fico (1972), those methods applicable to the treatment of post-inflammatory stenosis will be discussed at a later stage.

For brief historical note of D.C.R. it is essential to go in past. It's origin according to Chandler, dates from the time of celsus in the first century of the Christan era.

Galen in the second century also employed to surgery to create a new passage way from the lacrimal sac to nose. It's details were elaborated by Chandler (1936) as well as others like - Arruga (1946) and Welt (1950) excelently.

Modern surgery of the lacrimal sac began in Italy, in 1904, with Toti's description of an operation which involved (1) creation of an opening into the nasal wall with hammer and chisel, and (2) removal of the nasal mucosa in this opening and the medial half of the lacrimal sac. Sutures were used only in the skin. Toti was successful

in about half of his cases. Blascovics, in 1912, used the Toti's technique but removed the entire lacrimal sac except for a small portion surrounding the opening of the canaliculi.

Thereafter, the basic technique of dacryocysto-rhinostomy was successively modified as follows :

In 1914, Kuhn cut the nasal mucosa in horseshoe fashion, leaving it attached anteriorly and suturing it to the periosteum anterior to the bony opening.

In 1921, Mosher combined the Toti's technique with intranasal removal of the middle turbinate and suture of the anterior border of the opening in the lacrimal sac to the tissues anterior to the bony opening. He anticipated success in 90% of all cases. In 1947, Hogan reported such results in 49 operations performed by a modification of the Mosher-Toti technique.

In 1920, and again in 1922, Dupuy-Dutemps and Bourguet in France and Ohms, working independently in Germany, modified the Toti technique by dissecting the anterior and posterior flaps of the nasal and lacrimal mucosa and then suturing the flaps together. The French surgeon had successful results in 94.8% of more

than 1000 operations. Since then a member of other observers have reported large series of operations perfofmed in this technique with success rates ranging from 85 to 100%.

In 1925, Basterra modified the Dupuy-Dutemps technique by dissecting an anterior flap of nasal mucosa and suturing it to the anterior border of the opening in the lacrimal sac.

In 1944, Soria recommended suturing a angle flap of nasal mucosa to the posterior flap of the lacrimal sac. He also recommended suturing the anterior flap of the sac of the anterior border of the bony opening. Gauze drainage from the sac down to the nasal fossa was provided for 72 hours.

In 1911, Forsmark recommended transplantation of the lacrimal sac. The same recommendation was made by Stock in 1934, and by Gifford in 1944. In this technique the sac is severed from the nasolacrimal duct at its junction with it, after which its lower end is pulled into the bony opening by sutures brought out through the nosal.

In 1946, Arruga brought together his experiences with dacryocystorhinostomy, which covered many years and which had previously been reported in a number of publications. His operations were performed by the Dupuy-Dutemps technique and were facilitated by several new instruments of his own design. He also described a technique of dacryocystorhinostomy applicable to patients who had previously undergone dacryocystectomy.

In 1954, Iliff suggested that the Stryker can be used to open the lateral bony nasal ball. This was a very helpful suggestion. The use of this instrument simplifies the technique, shortens the operating time, and diminishes the former risk of damage to the soft tissues. The rapid oscillating action of the saw is far less traumatic than the action of dental or other burs, bone chisels, and rongeurs.

In what has been said so far in this brief historial note one must be impressed by the many efforts made to modify the Dupuy-Dutemps technique. The reason, it seems, is that this is a difficult operation, particularly in respect to the accurate approximation of the corresponding flaps of nasal mucosa and lacrimal sac by direct sutures. Another reason for failure in a certain number of cases is postoperative closure of the newly created lacrimal tract.

either by formation of granulation tissue at the new bony opening or by adhesion, of the anterior flaps to the posterior flaps Arriaga puts particular stress on this latter possibility. To simplify the operation, several observers recommend that no sutures be used to unite the flaps put instead, plugging agents should be left between them. Other surgeons use the basic Dupuy-Dutemps technique or some modification thereof and suture the flaps, but also leave some sort of plugging agents between them (rubber catheters, steel wire, silicone sponges, polyethylene tubes, umbilical tape, and wicks of suture material and guaze).

To bring this resume to a close, in 1958, and again in 1963, I myself presented a technique of external dacryo-cystorhinostomy, based in part upon the operation described by Ramon Castroviejo in 1942, and itself a modification of the Dupuy-Dutemps technique. The flaps are sutured as recommended by Soria. The bony opening is created by the Iliff trephine on the Stryker saw. A 2-0 or 4-0 silk suture is left in the new lacrimal drainage pathway for several days, as recommended by Castrovieio. I have used this technique over the past several years and have found it simple, safe, efficient, and uncomplicated. Absence of bleeding, when it is properly performed, is one of its most desirable features.

Useful as dacryocystorhinostomy is, dacryocystectomy is still indicated in three diseases of the lacrimal sac - namely, malignant lesions, tuberculosis, and syphilis. This operation was formerly the favoured procedure for all conditions of the lacrimal sac, but now it has been almost entirely replaced by external dacryocystorhinostomy. Dacryocystorhinostomy takes a little longer to perform, it is true, which is undesirable in older patients, and it is somewhat more traumatic than simple excision of the sac but these disadvantages are more than compensated for by the better end results.

If a chronic dacryocystitis must be corrected before intraocular surgery, dacryocystorhinostomy is the preferred operation. Even if the epiphora that tends to persist after the excision operation is not severe, stagnation of tears in the conjunctival sac can create a dangerous, persistent infection that may complicate any subsequent intraocular procedure.

Dacryocystorhinostomy is also indicated for the relief of disabling epiphora due to physiologic insufficiency of the lacrimal pump or to atonic distension of the lacrimal sac.

The surgeon who undertakes any operation on the lacrimal sac must possess a precise knowledge of the anatomy of the lacrimal excretory pathways and of their relations to other structures and landmarks. Bleeding will be excessive and dangerous for instance, unless the surgeon bears in mind the position of the angular blood vessels, which are situated slightly anterior to the anterior lacrimal crest.

Preoperative dacryocystography may give valuable information. Two other preoperative precautions are important. Patency of the lower punctum, the common punctum and the canaliculus must be assured, and good illumination must be provided, preferably with a Lempert head lamp.

MATERIAL & METHODS

MATERIAL & METHODS

All the patients were admitted in the Ophthalmology (Eye) ward at M.L.B. Medical College, Hospital, Jhansi with chief complaints of continuous water pus discharge from lacrimal sac. The cases were diagnosed as chronic dacryocystitis. All the patients were examined and investigated under the given proforma.

In every case, a detailed history of symptoms, duration, presence of associated disease in the nose and sinuses were taken. In cases of congenital and infantile dacryocystitis individual particulars were considered accordingly.

A careful examination of the Eyes in general and lacrimal excretory system, nose and sinuses in particular details were conducted. In all the cases following points were given through consideration.

1. Position of the lid -

   A - Eversion

   B - Inversion

2. Presence and absence of puncta and their patency under following heads -

Lacrimal Sac - external examination of sac :

A. (1) Position of puncta -

- Upper

- Lower

(2) Colour of skin

(3) Swelling

(4) Fistula

(5) Any discharge

B. Syringing -

- Upper puncta

- Lower puncta

C. Patency -

- Patent

- Blocked

D. Regurgitation -

- Same puncta

- Upper puncta

E. X-ray PNS -
(As & where needed)

F. Dacryocystogram (D.C.G.) -
(As and where needed)

G. Schirmer test -
(As and where needed)

Anesthesia :

The best results in external dacryocystorhinostomy are obtained with general anesthesia supplemented by local anesthesia applied to the nasal mucosa and the superficial tissues over the lacrimal sac as follows :

A cotton tampon, well satured with xylocaine (2% and epinephrine (1:1000) is introduced into the nose and brought into contact with the area of nasal mucosa which corresponds to the lacrimal fossa. A length of thread attached to this tampon facilitates its later removal at the appropriate stage of the procedure. The shrinkage and ischemia which follow this application inhibit bleeding when the mucosa is incised.

The superficial tissues over the lacrimal sac are injected with 3 ml of xylocaine 2% solution, to which two drops of epinephrine (1:1000) have been added.

Conventional D.C.R. method is addopted up to the step of opening of lacrimal sac. After the exposure of lacrimal sac it is retracted laterly to expose lower part of lacrimal fossa. An ostium is created with the help of JENKIN's type mastoid gauge, in the lower part of lacrimal fossa. The gauge passes through lacrimal bone and nasal mucosa. The gauge points towards posterior, medial and lower directions.

A vertical incision around 3 mm long is made through, the 2 mm incision is made in the postero - medial wall of the sac, just opposite to the ostium.

Now a sterlised implant is loaded on the introducer and introduced through anterior opening of the lacrimal sac into the nasal cavity. It is placed in such a way that it points towards posterior, medial and lower directions similar to the direction of mastoid gauge. The wider portion (Collar) of the implant lies in the cavity of the sac and the other end in the middle meatus of the nose.

Saline is injected through the funnel of implant and the patient is questioned for feeling of matter in the throat for confirmation of proper position of implant.

The sac and surgical field is irrigated with normal saline and 1 : 1000 adrenaline.

The wound is closed with 6-0 chromic catgut in layers. Syringing is performed immediately after closure of wound. A light dressing is applied on wound.

Patient is kept on oral antibiotics and anti - inflammatory drugs for 3 days and get discharged on 3rd day.

Syringing is done on 3rd day and repeated once a week for four weeks.

AIMS OF STUDY :

1. As D.C.R. by conventional method gives failure even in best hands, to see results with nasal intubation, whether in they are better or not.

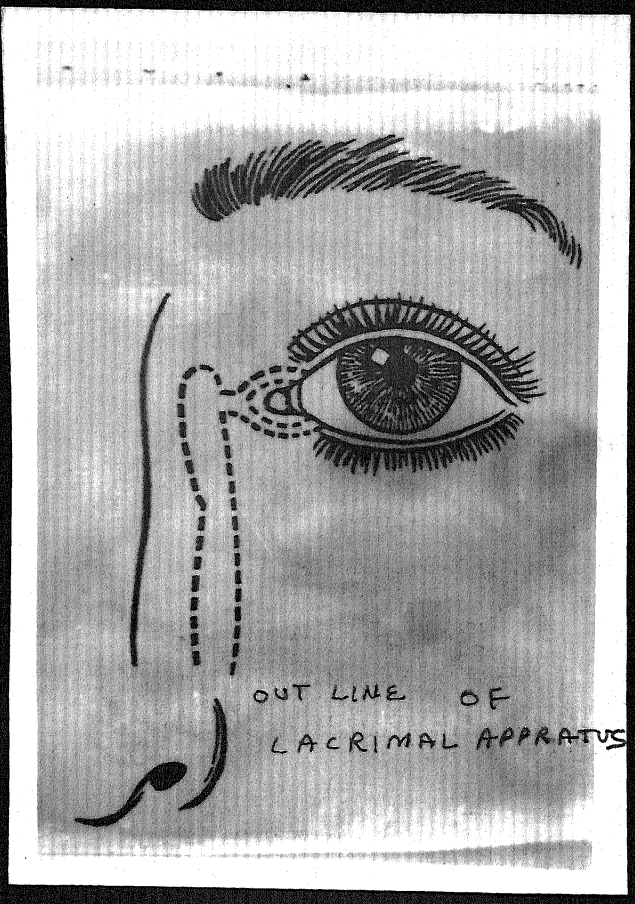
2. Role of nasal implant method in cases where D.C.T. has already been done.

3. To see the mobility of patient to as compare with conventional D.C.R.

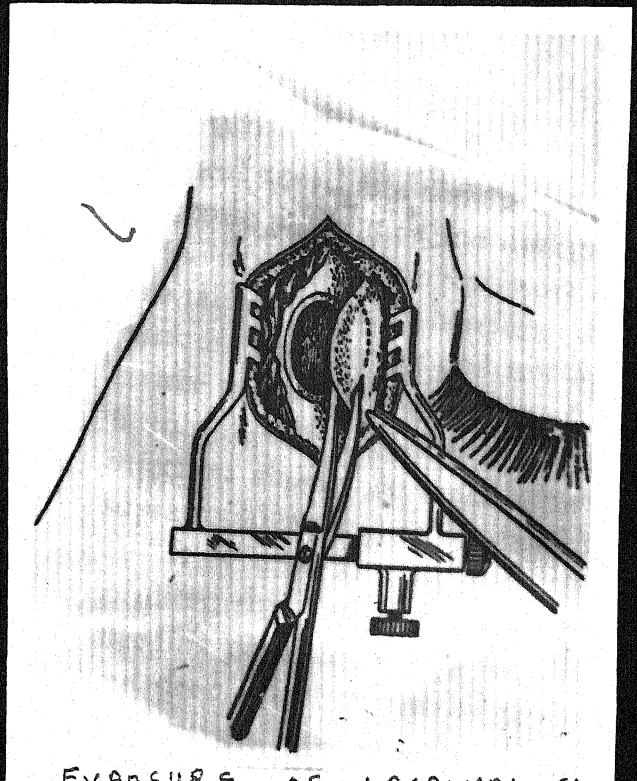
4. Cosmetic usefulness of nasal implants.

5. Usefulness of implants in deformed nasal bridge and senile atrophic mucosa.

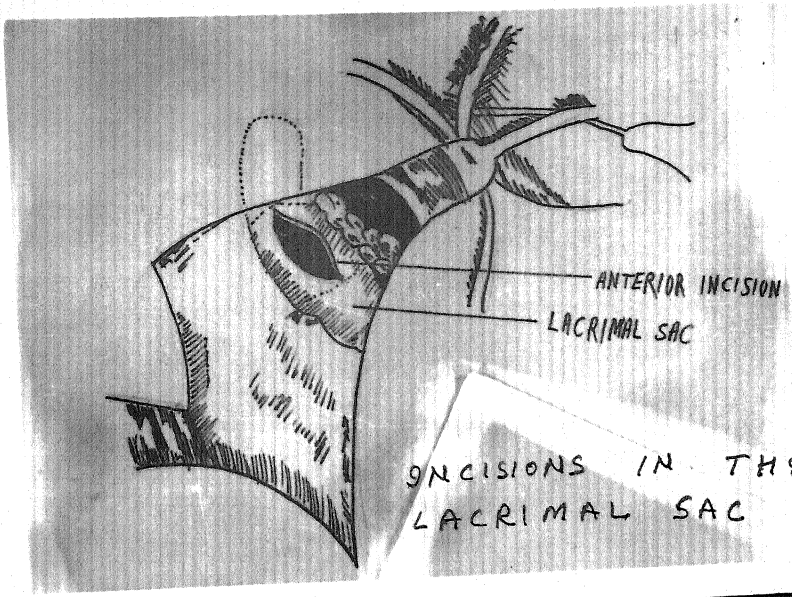
6. Usefulness of implants in infancy.



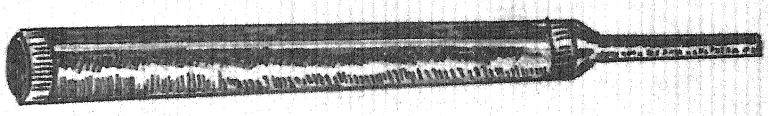
OUT LINE OF
LACRIMAL APPRATUS



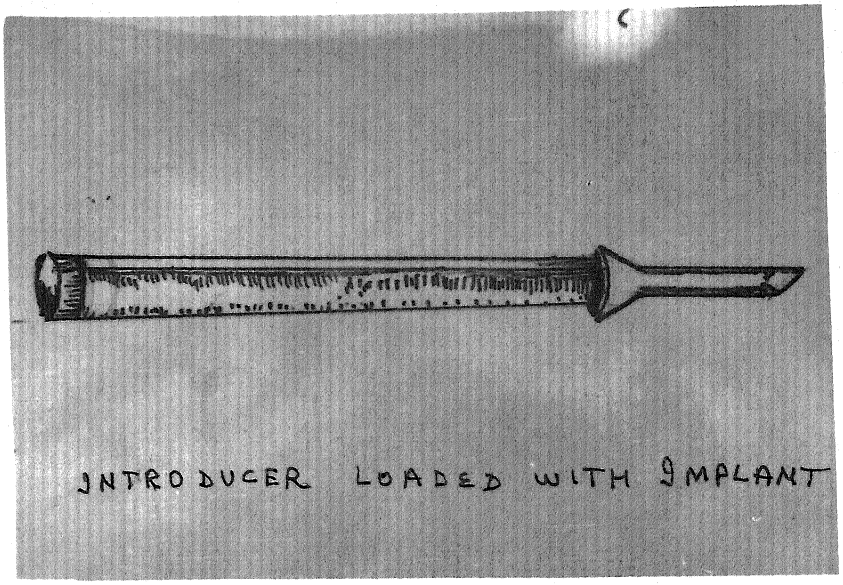
EXPOSURE OF LACRIMAL SAC



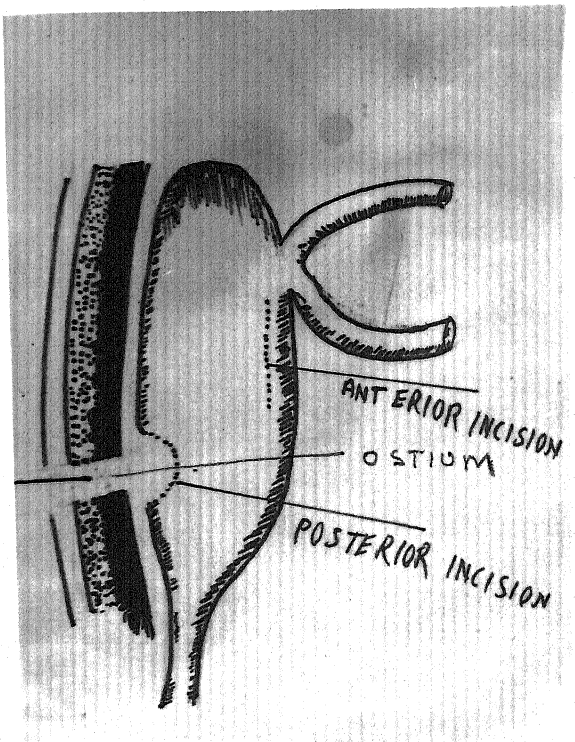
INCISIONS IN THE LACRIMAL SAC



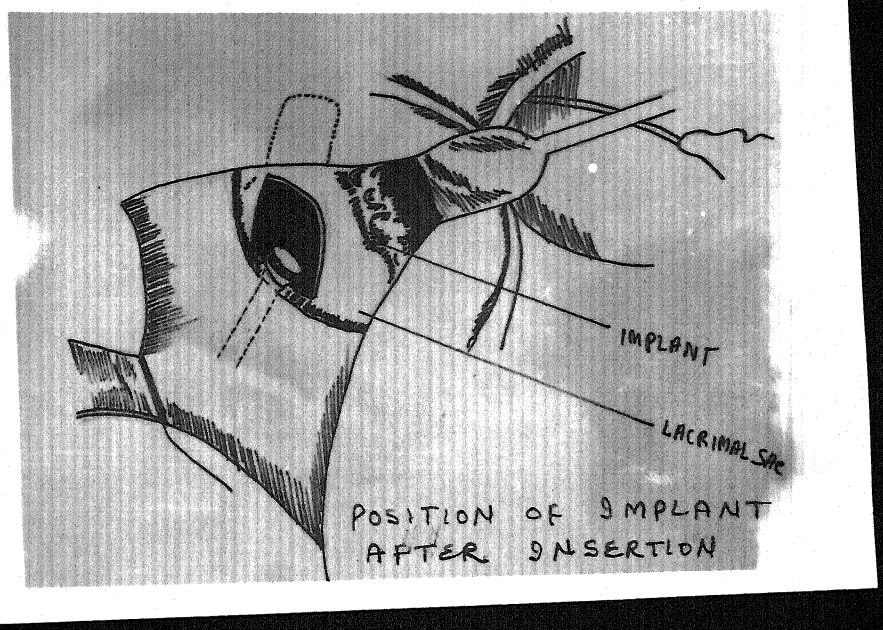
INTRODUCER



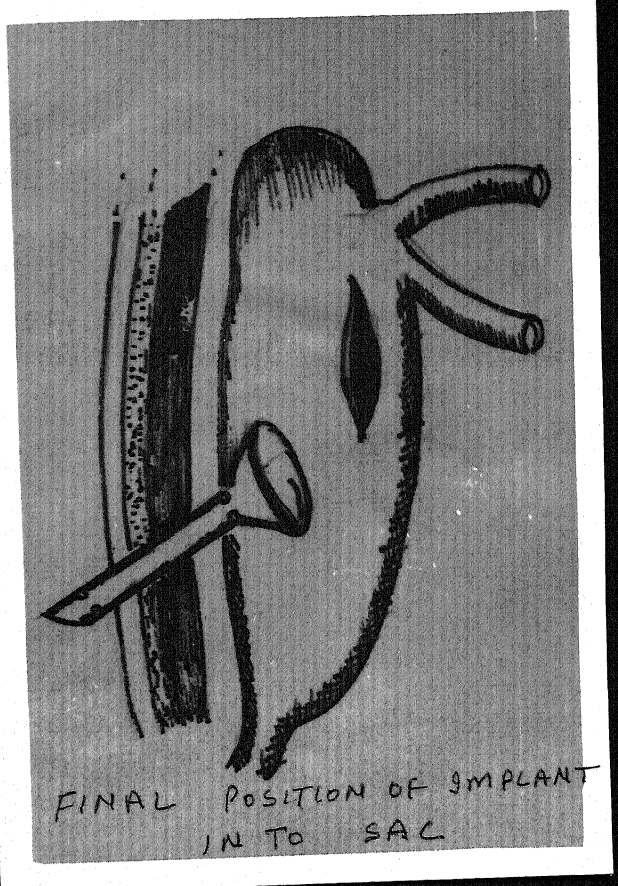
INTRODUCER LOADED WITH IMPLANT



ANTERIOR AND POSTERIOR INCISIONS IN SAC WALLS



POSITION OF IMPLANT
AFTER INSERTION



FINAL POSITION OF IMPLANT
IN TO SAC

OBSERVATIONS

OBSERVATIONS

Our present study consists of total 50 cases of chronic dacryocystitis out of which 15 cases were operated by conventional D.C.R. method and rest 35 cases were put nasal implants. In our study we used PAWAR implant. The cases were devided into 2 groups.

Group - A :

Consists of 15 cases of chronic dacryocystitis where conventional method of dacryocystorhinostomy was adopted. In this group out of 15 patients 5 patients get affected by -as shown in sub-group (i) -- bilateral chronic dacryocystitis and 10 patients with unilateral dacryocystitis as shown in sub-group (ii).

Sub Group (i) : Consists of 5 patients having bilateral chronic dacryocystitis.

Sub Group (ii) : Consists of 10 patients having unilateral chronic dacryocystitis.

Group - B :

It consists of 35 cases of chronic dacryocystitis where D.C.R. implant operations were performed. It is sub-devided into 3 sub-groups as followed.

Sub Group (i) : Consists of 10 cases of chronic dacryocystitis having bilateral involvement.

Sub Group (ii) : Consists of 20 cases of chronic dacryocystitis where unilateral involvement occured.

Sub Group (iii) : Consists of 5 cases where already D.C.T. was done.

CLINICAL PARTICULARS :

In our study of 50 cases females were affected more commonly (68%) than males (32%). The sex ratio is shown in table - I.

Table - I

AGE & SEX DISTRIBUTION OF CASES

Sl. No.	Age group in years	No. of cases	Male	Female
1.	11 - 20	12	04	08
2.	21 - 30	18	06	12
3.	31 - 40	13	04	09
4.	41 - 50	05	02	03
5.	51 - 60	02	-	02
	Total	50	16 (32%)	34 (68%)

Age : Age distribution in our series of studies of cases varies from 11-60 years. Maximum cases were found in age group of 21-40 years both for females as well as of males. The age incidence in both sexes is shown in above table.

SIDE INVOLVEMENT :

Left side was more commonly involved than the right side as shown in table - II. Bilateral involvement was found in 25 cases. Out of 06 cases, 02 cases were operated by conventional D.C.R. method, while 02 cases were operated through D.C.R. implant method.

Table - II

SHOWING INVOLVEMENT OF EYE

Sl. No.	Type of operation	Total no.of cases	INVOLVEMENT OF		
			Right eye	Left eye	Both eyes
1.	Cases in which D.C.R. operation was done	15	05	08	02
2.	Cases where D.C.R. implant was performed	30	10	18	02
3.	Cases where D.C.R. implant was performed after D.C.T. operation	05	01	02	02
	Total	50	16	28	06
	Percentage	100%	32%	56%	12%

PRESENTING SYMPTOMS :

Presenting symptoms in chronic dacryocystitis were varied from watering of eyes to fistula formation. The most common symptom was mucopurulent discharge and watering from eyes which were present in 90% cases as shown in table - III.

Table - III

SHOWING PRESENTING SYMPTOMS IN 50 CASES

Sl. No.	Presenting symptoms	No. of patients	Percentage
1.	Mucopurulent discharge	25	50
2.	Mucopurulent discharge + watering	05	10
3.	Watering	15	30
4.	Mucopurulent discharge + swelling over sac	02	04
5.	Watering + swelling in sac area	02	04
6.	Mucopurulent discharge + fistula in sac area	01	02
	TOTAL	50	100

ASSOCIATED DISEASES :

All most all the cases of epiphora showed associated diseases. Deviated Nasal Septum (20%), maxillary sinusitis (35%), conjunctivitis (70%), trachoma (85%), and hypertrophied nasal mucosa (82%) were associated with chronic dacryocystitis.

Table - IV

SHOWING ASSOCIATED DISEASE

Sl. No.	Associated disease	Percentage
1.	Deviated Nasal Septum	20
2.	Maxillary sinusitis	35
3.	Conjunctivitis	70
4.	Trachoma	85
5.	Hyper-trophied nasal mucosa	82

BLOCKAGE OF NASOLACRIMAL DUCT DUE TO INFECTION AND INFLAMMATION :

In present study of 50 cases blockage of nasolacrimal duct due to infection, or inflammation was noted in 5 cases. In conventional D.C.R. method, partial patency of nasolacrimal duct occured in 13.4% cases and in rest 13.4% cases there was complete blockage of tube as shown in table V.

TABLE- V

BLOCKAGE OF NASOLACRIMAL DUCT DUE TO INFECTION AND INFLAMMATION

Sl. No.	Type	No. of cases in conventional D.C.R.	No. of cases in D.C.R. implant
1.	Blockage due to inflammation, infection responding to antibiotics and anti-inflammatory drugs.	2 (13.4%)	2 (06.7%)
2.	Infection & inflammation of long duration not responding to drugs	1 (06.7%)	1 (03.3%)
3.	Blockage due to granulation tissue	1 (06.7%)	- -
	TOTAL	4 (26.8%)	3 (10.0%)

BLEEDING OCCURED DURING OPERATION :

Operative bleeding was mostly seen in cases where conventional D.C.R. operation was performed but in D.C.R. implant cases bleeding during operation was reported only in 2 cases out of 35 cases as shown in table VI.

Table - VI

INCIDENCE SHOWING BLEEDING DURING OPERATION

Sl. No.	Type of operation	Total no.of cases	No. of cases where bleeding occured Per-operatively	%
1.	Conventional D.C.R. method	15	05	33.3
2.	D.C.R. Implant method	30	02	06.7
3.	D.C.R. Implant after D.C.T. operation	05	-	-
	TOTAL	50	07	40.0

Post operative abscess of skin incision :

In post-operative follow up out of 50 patients operated only 40 cases turned up for follow up. In 2 cases skin incision abscess was seen in which D.C.R. operation was done while there was not a single case reported for skin incision abscess of D.C.R. implant as shown in table - VII.

Table - VII

INCIDENCE OF POST OPERATIVE ABSCESS OF SKIN INCISION

Sl. No.	Type of operation	Total no.of cases	No. of cases where incision skin abscess occured
1.	D.C.R. Operation	15	02
2.	D.C.R. implant	30	-
3.	D.C.R. implant where D.C.T. was performed	05	-
	TOTAL	50	02

INCIDENCE OF OBSTRUCTION OF BONY OPENING :

In our study due to obstruction of bony opening drainage occluded in one case in conventional D.C.R. method, in which deviated nasal septum was associated but no such occlusion of drainage was reported in D.C.R. implant method, but one case was reported in cases where D.C.T. was already done, as shown in table - VIII.

Table - VIII

INCIDENCE OF OBSTRUCTION OF BONY OPENING

Sl. No.	Type of operation	Total no.of cases	No. of cases where occlusion occured
1.	Conventional D.C.R. method	15	01
2.	D.C.R. implant	30	-
3.	D.C.R. implant where D.C.T. done	05	01
	TOTAL	50	02

INCIDENCE OF EXPULSION OF NASAL IMPLANT :

In our study we performed 35 operation of D.C.R. implant and out of 35 cases one case of implant expulsion was noted, as shown in table - IX.

Table - IX

INCIDENCE OF EXPULSION

Sl. No.	Type of operation	Total no.of cases	Incidence of expulsion	%
1.	Conventional D.C.R.	15	-	-
2.	D.C.R. implant	30	01	6.7
3.	D.C.R. implant where D.C.T. was performed	05	-	-
	TOTAL	50	01	6.2

PATENCY OF NASOLACRIMAL DUCT :

In 41 cases the duct was patent from the first postoperative syringing and remained patent throughout follow up period. While in 6 cases the tube was partialy patent, whereas in 4 cases, it was completely blocked. As shown in table - X, it is seen that the duct was blocked in 4 cases and were completely labeled as failure.

Table - X

PATENCY OF NASOLACRIMAL DUCT

Sl. No.	Type of operation performed	Total no.of cases operated	No. of cases where patency of nasolacrimal duct was observed		
			Complete patency	Partial patency	Failure to establish patency
1.	Conventional D.C.R.	15	11 (73.2%)	02 (13.4%)	02 (13.4%)
2.	D.C.R. implant	30	27 (90%)	02 (6.7%)	01 (3.3%)
3.	D.C.R. implant where D.C.T. was already done	05	03 (60%)	02 (40.0%)	01 (20.0%)
	TOTAL	50	41	06	04

DISCUSSION

DISCUSSION

The present study consists of 50 cases of chronic dacryocystitis of which 15 cases were operated by conventional D.C.R. method. Complete patency was observed in 11 (73.2%) cases and 2 cases (13.4%) were labelled complete failure. 35 cases were operated by D.C.R. implant method of which 27 cases (90%) were having complete patency in post-operative follow up, 2 cases (6.7%) as partialy patent and one case (3.3%) was found as complete failure.

We have analysed these cases and try to find out the possible causes of failure and other post-operative problems under following heads.

AGE & SEX :

In our study we found 12 cases in age group of 11-20 years, 18 cases in 21-30 years, 13 cases in 31-40 years, 5 cases in 41-50 years and only 2 cases in 51-60 years of age as shown in table no. I. The peak incidence of the disease in females occured in late twenties and early thirties. This difference was due to the fact that specific infections are common in males shile females are suffered from chronic irritation due to smoke and their daily household activities.

In our study highest incidence of dacryocystitis was found in the age group of 21-30 years. But according to Duke Elder (1961) highest incidence of dacryocystitis was reported in the age group of 15-20 years. Besides dacryocystitis in the new born, the disease affects preferentially adults over middle life and can occur in advanced stage.

S.R.K. Malik et al (1969) found that average age in females was 35 years and in males it was 23 years. The highest incidence in females was in age group of 30-40 years, whereas, in females it was in late twenties.

Duke Elder's (1961) ratio of male and females was 1 : 3, however, in our study male and female ratio observed is 1:2 (male patients were 16 (32%) and female patients were 34 (68%).

According to Duke Elder (1961), disease in new born affects both sexes equally. It's occurrence among adults is in the ratio of 70 to 80% female and 20 to 25% males.

It is usually said, this very striking predilection for the female is due to a narrower lumen of the bony lacrimal canal (Meller, 1929; Ruiz Banenco and Martines Roman, 1966 and others).

Saha et al (1967) also found that the incidence of lacrimal passage pathology was more in females. Malhotra et al (1984) also observed that females were more affected than males.

INVOLVEMENT OF EYES :

In our study of 50 cases of chronic dacryocystitis 44 cases (88%) had unilateral involvement, whereas 6 cases (12%) had bilateral involvement of the eyes. The left eye was more frequently involved, in 28 cases (56%) than the right eye 16 cases (32%)as shown in table no. II. Malik et al (1969) and lateron Mukherjee,P.K. and Jain,P.C. (1972) also reported that left side was more commonly involved them the right side. There is no explaination for this kind of behaviour.

PRESENTING SYMPTOMS :

In this study of 50 cases of chronic dacryocystitis the symptom of inflammation of lacrimal sac and duct presented many variations, as shown in table - III. We found that in 25 cases there was mucopurulent discharge, in 5 cases mucopurulent discharge with watering, in 15 cases only watering was the chief complaint. But in 2 cases mucopurulent discharge was associated with swelling over sac. In 2 cases swelling was associated in sorrounding region also. In one case mucopurulent discharge was associated with fistula.

The most common symptom was mucopurulent discharge and watering which were present in 90% cases.

ASSOCIATED DISEASES :

Co-relation of chronic dacryocystitis with associated diseases is shown in table IX. There is little doubt that the spread of infection from the neighbouring structure frequently determines the onset of inflammation, diseases of neighbouring bones and tissues, which may spread to sac. In our study 20% cases were found having deviated nosal septum and highest incidence was of hypertrophied nosal mucosa (82%). Similarly sinus diseases has a close relation with lacrimal inflammation. In our study 35% of cases reported were affected by maxillary sinusitis. It is probable that the infection spreads either by lymphatic pathways or other sources. Lacunal in the lacrimal bone sometimes allows direct continuity between the ethmoids and sac, the walls of lacrimal fossa and the upper part of the duct get preumatized by ethmoidal cells.

Conjunctival infection spreads directly but all the evidence points go to its rarity. In our study 70% cases were reported having conjunctivitis. But the infiltrating diseases such as trachoma also causes infections.

General infections and general diseases are occasionally responsible for the onset of chronic dacryocystitis, as is indicated in influlenza, scarlet fever, diptheria, chicken pox or small pox (Mangaillan and Marenon, 1923; Mukherjee et al, 1969).

BLEEDING OCCURED DURING OPERATION :

Bleeding during operation was more in cases where D.C.R. operation by conventional method was done as shown in table VI. We operated 15 cases by conventional method and out of 15, in 5 cases bleeding occured during operation. Because due to the bony opening and sometimes destruction of nasal mucosa chances of bleeding is more. As compared to D.C.R. with implant where only two cases had bleeding (mild).

PATENCY OF NASOLACRIMAL DUCT :

Patency of duct was seen in 41 cases of total cases as shown in table X. High patency was seen in D.C.R. implant cases (90%). Patency with conventional D.C.R. was seen in 11 cases (73.2%). In two cases partial patency was seen in conventional D.C.R. method (13.4%). And with D.C.R. implant in two cases (6.7%). The failure patency was seen in total 4 cases out of which two cases (13.4%) were noted in conventional D.C.R. and one case in (3.3%) D.C.R. implant and one case (20%) was seen in where D.C.T. has already been done as shown in table-X.

Bowman (1957) used probing usually fails in establishing patency. Summerskill (1952) used polythene intubation in 80 cases but results of patency were 80%. Singh and Garg (1972) and leteron Mukherjee in 1972 tried polythene intubation in 44 cases but success rate was 40%. The success rate of D.C.R. was 80-90% (Stallard, 1973) while 8% suffers from reoccurrence.

The idea of keeping the nasolacrimal duct patent with a tube is not new. Valesstin-Gamazo (1957 reported 15 cases but there was 1 failure. Dejan (1955) achieved uniformly good results. Le Grand (1957) reported 16 cases but got 100% failure.

Jogelkar (1978) observed 95.34% success rate by D.C.R. method. Pradeep B. and Rajendra Babu (1983) observed complete patency in 17 cases while 2 cases were having partial patency and one case as failure. Maria, D.L. & V.S.K. Ballurkar (1983) observed 78% success rate, partial patency in 12% cases and failure in 10% cases. Guillermo Pico (1971) performed 121 operations by D.C.R. method and there were only 4 failures. Pawar and Patil (1987) from Nagpur Medical College used Pawar implants with a success rate of 95%.

SUMMARY

SUMMARY

Different Medical and Surgical methods of restoring the patency of the obstructed lacrimal passages have been tried since ancient times. Medical treatment has no value in chronic dacryocystitis. D.C.R. is the operation of choice in patients complaining epiphora due to obstruction of the lacrimal draining system. D.C.R. by routine method gives definitely few failures in the best hands where all technical details are observed like proper size of bony window (12.5 mm x 10 mm), proper suturing and proper size of flaps. The average rate of success is about 80 to 90%. D.C.R. is a time consuming process involving cutting of bones, nasal mucous membrane etc; lateron polythene tube intubation was tried by Summerskill (1952)

Inflammation of lacrimal sac and duct is a common and unpleasent disease, partly because of the troublesome and conspicious systems it may causes, partly because it has little tendency to resolve and its adequate treatment presents considerable problems.

Chronic dacryocystitis secondary to obstruction of nasolacrimal duct is a frequent congenital anamoly. Since more than 50% of these obstructions open spontaneously but generally it is delayed until the patient is 6 months old.

Later on D.C.T. was an usual technique but now to make the communication permanent-essentially a rhinological problem-remained unsolved until an Italian rhinologist, Totl (1904), evolved his operation of external dacryocystorhinostomy. The operation was not immediately popular. D.C.R. is performed in adults, who have chronic dacryocystitis, secondary to complete or partial obstruction of the nasolacrimal duct and in children who have recurrent dacryocystitis after several probings and lacrimal intubation.

Apart from this conventional method of D.C.R. a modified technique of D.C.R. has been developed. Probing which was advocated and practised (Bowman in 1857) in adults usually fails in establishing its patency, endangers orbital cellulitis its fibrous stricture. D.C.R. is a time consuming process but as a modified technique polythene intubation was started by Summer hill. Intubation being a simpler process was tried in 80 cases of chronic dacryocystitis and patency of nasolacrimal duct was found in 78 cases. Silicone intubation is a safe and effective method for relief but expensive one.

The failure of D.C.R. is rare occuring in most series in less than 10% cases. The management of unsuccessful D.C.R. poses a threaupetic problem. In failed cases when the site is explored one can observe growth of granulation tissue in raw areas.

This process is usually done under local anaesthesia but general anaesthesia is prefered in children. For local anaesthesia, we give 2% xilocain with adrenaline (1.1000).

Conventional D.C.R. method is adopted upto the step of exposure of lacrimal sac. After the exposure of lacrimal sac, now sac is retracted lateraly to expose lower part of lacrimal fossa. A vertical incision around 3 mm in postero-medial wall of the sac. Now the implant is introduced through the ant. opening of sac into nasal cavity. The wider portion lies in the cavity of sac and the other end in the middle meatus of nose. Now the wound is closed by chromic catgut 6.0 and sac is irrigated with normal saline and adrenaline (1.1000) immediately after closure. Patient get discharged on 3rd day.

Syringing is done on the 3rd day and repeated once a week for 4 weeks.

Our present study consists of total 50 cases of chronic dacryocystitis out of which 15 cases were operated by conventional D.C.R. method and rest 35 cases were put nasal implants. In our study we used PAWAR implent. The cases were devided into 2 groups.

Group - A :

Consists of 15 cases of chronic dacryocystitis where conventional method of dacryocystorhinostomy was adopted. In

this group out of 15 patients 5 patients get affected by as shown in sub group (i) and bilateral chronic dacryocystitis and 10 patients with unilateral dacryocystitis as shown in sub-group (ii).

Sub-group (i) : Consists of 5 patients having bilateral chronic dacryocystitis.

Sub-group (ii): Consists of 10 patients having unilateral chronic dacryocystitis.

Group - B :

It consists of 35 cases of chronic dacryocystitis where D.C.R. implant operations were performed. It is sub-devided into 3 sub-groups as followed.

Sub-group (i) : Consists of 10 cases of chronic dacryocystitis having bilateral involvement.

Sub-group (ii) : Consists of 20 cases of chronic dacryocystitis where unilateral involvement occured.

Sub-group (iii): Consists of 5 cases where already D.C.T. was done.

Total 50 cases were operated, 15 cases were operated by conventional D.C.R. method and 35 cases were operated by D.C.R. implant method on behalf of our present study we make up following conclusions.

1. Chronic dacryocystitis is the disease which is more common in young adults ranging between 21-40 years involving left side more than right eye.

2. Females are more commonly affected probably due to long and narrower lumen of the bony lacrimal canal.

3. Most common site of obstruction was found at the junction of lacrimal sac and nasolacrimal duct. Second commonest site was found at the sinus of maier.

4. Diseases of conjunctival sac, nose and paranasal sinuses also contribute in the obstruction of nasolacrimal passage.

5. Bleeding occured during operation was much more in conventional D.C.R. method than the D.C.R. implant method.

6. Conventional D.C.R. method is a time consuming process than D.C.R.implant method.

7. The motility of patient was observed earlier where D.C.R. implant method was adopted than the conventional D.C.R. method.

8. D.C.R. implants are very useful cosmeticaly than conventional D.C.R. method.

9. D.C.R. implant method can also be adopted where in patients D.C.T. was already done.

10. As far as patency of nasolacrimal duct was observed much better results are seen in D.C.R. implant method.

Thus the D.C.R. implant method is better than the conventional D.C.R. operation.

.*.*.*.*.

CONCLUSIONS

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The present study "Comparative study of chronic dacryocystitis by conventional D.C.R. & D.C.R. implant" was carried out in the department of Ophthalmology, M.L.B. Medical College, Jhansi. Total 50 cases were operated, 15 cases were operated by conventional D.C.R. method and 35 cases were operated by D.C.R. implant method on behalf of our present study, we make up following conclusions.

1. Chronic dacryocystitis is the disease which is more common in young adults ranging between 21-40 years involving left side more than right eye.
2. Females are more commonly affected probably due to long and narrower lumen of the bony lacrimal canal.
3. Most common site of obstruction was found at the junction of lacrimal sac and nasolacrimal duct. Second commonest site was found at the sinus of maier.
4. Diseases of conjunctival sac, nose and paranasal sinuses also contribute in the obstruction of nasolacrimal passage.
5. Bleeding occured during operation was much more in conventional D.C.R. method than the D.C.R. implant method.

6. Conventional D.C.R. method is a time consuming process than D.C.R. implant method.

7. The motility of patient was observed earlier where D.C.R. implant method was adopted than the conventional D.C.R. method.

8. D.C.R. implants are very useful cosmeticaly than conventional D.C.R. method.

9. D.C.R. implant method can also be adopted where in patients D.C.T. was already done.

10. As far as patency of nasolacrimal duct was observed much better results are seen in D.C.R. implant method.

Thus the D.C.R. implant method is better than the conventional D.C.R. operation.

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APPENDIX

APPENDIX

DEPARTMENT OF OPHTHALMOLOGY,
M.L.B. MEDICAL COLLEGE, JHANSI (U.P.)

PROFORMA FOR EXAMINATION

Case no. _____ Date: _____

1. Name of Investigator :
2. Surgeon I/c :
3. Place :

DETAILS OF PATIENT :

1. Name :
2. Age / Sex :
3. O.P.D./M.R.D. NO. :
4. Occupation :
5. Address :
6. Socio-economic status:

A. Presenting symptoms -

1. 2.
3. 4.

B. Brief history of present illness :

C. Past history :

- Tuberculosis
- Diabetes
- Any other

D. Family history :

H/o active tuberculosis in any family members of known case of tuberculosis of neighbours :

E. Personal history :

F. Examination : (a) General Examination -

- General appearence
- Vitals
- Cyanosis
- Oedema
- Lymphadenopathy : - Cervical
  - Axillary
  - Inguiral
  - Other

b. Systemic examination :
- Respiratory
- C.V.S.
- C.N.S.
- Abdomen

2. Local examination :

- Head
- Face : Symmetry

RE LE

- Orbit
- Eye brows
- Eye lashes
- Eye lids
- Conjunctiva (Elaborative)
  - Bulbar
  - Palpabral

Lacrimal Sac - External examination of sac :

A. (1) Position of puncta
- Upper
- Lower

(2) Colour of skin

(3) Swelling

(4) Fistula

(5) Any discharge

B. Syringing -
- Upper puncta
- Lower puncta

C. Patency -
- Patent
- Blocked

D. Regurgitation -
- Same puncta
- Upper puncta

E. X-ray PNS -
(As & where needed)

F. Dacryocystogram (D.C.G.) -
(As & where needed)

G. Schirmer test -
(As & where needed)

- Cornea :
  - Size
  - Shape
  - Curvature
  - Transparency
  - Others

- Anterior chamber -
  - Depth
  - Contents

- Iris -
  - Colour
  - Surface
  - Patterns
  - Others

- Pupil -
  - Lens
  - Visual acuity
  - Tension - digitally

- E.N.T. check up - for any Nasal Pathology

INVESTIGATIONS :

Blood - TLC
- DLC
- Hb %
- ESR
- BT
- CT

Urine - Albumin
- Sugar
- Microscopic

Stool - for any ova/cyst of hilmenthic group

Any other -

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